



Turtle River Times

The newsletter of the A.R.M. Loxahatchee National Wildlife Refuge

*Issue 3
Jan. - Apr. 2003*

CE-LE-BRA-TION

by Mark Musaus - Refuge Manager

As I was contemplating this issue of the newsletter, my plan was to write about the National Wildlife Refuge System Centennial. What kept going through my mind was the song by Kool and the Gang from several years ago

***Celebrate good times, come on! (Let's celebrate)
Celebrate good times, come on! (Let's celebrate)***

***There's a party goin' on right here;
a celebration to last throughout the year;
so bring your good times, and your laughter too
We gonna celebrate your party with you....***

2003 is the refuge system's centennial year as the first refuge, Pelican Island NWR, was established by President Theodore Roosevelt on March 14, 1903. It all began with one man and one boat, protecting pelicans on a tiny five-acre island in Florida. From that humble beginning arose the world's largest and most diverse network of lands dedicated to the protection and management of a vast array of wildlife. America's National Wildlife Refuge System now encompasses over 94 million acres on 538 refuges and thousands of waterfowl production areas

It is time not only to celebrate but to recognize how the system has grown from its humble beginnings to the greatest system in the world set aside to protect and manage for wildlife. Thanks go to great men of vision like President Roosevelt, J. N. "Ding" Darling, J. Clark Salyer, as well as the support of Congress and the American public. With that in mind we want to celebrate over the coming year, just as the song says. There are several activities planned across the country as well as on the refuge.

There are exciting, new exhibits being built at the Smithsonian in Washington, D.C. and special activities at the Animal Kingdom in Disney World. There will be a postage stamp created and issued on March 14, to commemorate 100 years of conservation. You may see the refuge system logo, the blue goose, appear in all kinds of promotions, from calendars to racing cars. There will be several videos and books produced during the centennial year depicting the incredible beauty of both the landscapes and the wildlife that use this magnificent system of refuge lands.

Celebration

Let's all celebrate and have a good time

Celebration

We gonna celebrate and have a good time

It's time to come together

It's up to you, what's your pleasure

Everyone around the world

Come on!

Continued on Page 5...

In This Issue

CE-LE-BRA-TION.....	1
Everglades Day.....	2
What's Up?.....	3
Fire Program Update.....	4 - 5
Calendar of Events.....	6 - 10
The LILA Project.....	11
Staff Update.....	12 - 13
The Evil Weevil.....	14
Kids Corner.....	15

Fourth Annual Everglades Day

By Carol Shields

Looking to enjoy a beautiful day out with the family? Or perhaps an opportunity to get closer to Florida's nature? Then come to the 4th Annual Everglades Day Saturday, February 8, at the Arthur R. Marshall Loxahatchee National Wildlife Refuge in Boynton Beach. There are so many exciting choices, it could be tough to choose.

Everglades Day is a daylong event of free activities including



presentations by notable experts, tents with exhibits by local organizations, historical characterizations, children's programs and music on stage, canoeing and kayaking, and much more. For the past 3 years, the Refuge has opened its gates to

be the living library to the Everglades. This is an event to broaden the community's knowledge of this precious land in our backyard. Every year is focused on a different theme and presented through the exhibits, speakers and activities.

This year's theme is on Everglades' history to help celebrate the National Wildlife Refuge's Centennial birthday. 100 years ago, Teddy Roosevelt created the first National Wildlife Refuge right here in our own state. About 50 away from our refuge, in the Sebastian Inlet, is an island known as Pelican Island – this nation's first National Wildlife Refuge.

This year's keynote speaker is United States Senator Bob Graham. Other Everglades Day speakers include John Lopinot, photographic editor for the Palm Beach Post. John will be giving instruction on photographing wildlife

presentations and historical characters become part of the history as well. Visitors will be able to pick and choose from a day filled with programs and activities.

A special 'Author's Circle' will be at the Refuge from 10 a.m. until 2 p.m. with some of Florida's most popular authors available to speak to visitors. In addition an Author's Panel discussion will also be held at 1:30 p.m. Ann Spann Tyler, Jim Huffstodt, Richard Procyk, and Patrick Smith will delight us with their literary knowledge on Florida history.

Some of the exhibitors include the South Florida Water Management District, Arthur R. Marshall Foundation, National Audubon Society, Palm Beach Pack and Paddle Club, Florida Fish and Wildlife Conservation Commission, PalmNet, Loxahatchee Natural History Association, Gumbo Limbo and Okeeheelee Nature Centers. Other Florida National Wildlife Refuges will be represented to help celebrate the Centennial birthday.

The daylong event is free to the public. Free bus service will also be provided to and from off-site parking as well as shuttle service between activity sites. A special birthday celebration is scheduled in the Chickee at noon. In addition, dedications will be held for three new interpretive kiosks. Food vendors will be on the premises. All the events and activities are free except for the food.

Everglades Day is being held in partnership with the Audubon Society of the Everglades, the U.S. Fish and Wildlife Service, Arthur R. Marshall Loxahatchee National Wildlife Refuge (LNWR), and the Loxahatchee Natural History Association "Friends of the LNWR."

The Audubon Society of the Everglades (ASE) is a non-profit chapter of the National Audubon Society that supports conservation and environmental education throughout Palm Beach County. ASE has their general meetings the first Tuesday of each month at 7:30 p.m. at the West Palm Beach Garden Club in Dreher Park. The public is invited to attend.

Come join in the family activities and learn about the Everglades at the 4th Annual Everglades Day Festival on Saturday, February 8, from 8 a.m. to 4 p.m. at Arthur R. Marshall Loxahatchee National Wildlife Refuge. The refuge is located at 10216 Lee Road, Boynton Beach, FL, 33437. The entrance is 2 miles south of Boynton Beach Blvd. off of U.S. Route 441.



with a photo walk afterward. Javier del Sol will weave his children's tales on stage. Indian dance interpretation and a visual presentation of Everglades history from fossils to the CERP program are also part of the days activities. Wild animal

What's Up? Bromeliads

By Berni Reeves

As you look around in the cypress swamp, you will see many plants that look like the tops of pineapples. They are bromeliads, a type of air plant or epiphyte. These plants attach themselves to other plants and use them for support. However, bromeliads are not parasites, they get their nourishment from particles carried on the air and the water that collects in small pools at the base of their leaves. These leaves also trap organic matter, such as falling leaves, insects and bird dropping, which gradually decompose, releasing nutrients which can be absorbed directly through the leaf surface.

A noticeable feature of many bromeliads is that they produce special leaf structures which often appear brightly colored and may be mistaken as flowers. These modified leaves or bracts, gradually open to expose the true flowers which develop within them. The flowers themselves are generally small and inconspicuous. After fertilization, a seed pod containing tiny seeds, develops, and with maturity, bursts open to be carried by the wind to a bark crevice or other suitable site for the growth of a new plant.

The most abundant bromeliads of the swamp include the spectacular cardinal air plant (*T. fasciculata*), Spanish moss (*Tillandsia usneoides*), northern needleleaf (*T. balbisiana*), southern needleleaf (*T. setacea*), and ballmoss (*T. recurvata*).



Cardinal Air Plant
Tillandsia fasciculata

The Cardinal Air Plant, which occurs frequently in the refuge's cypress swamp, has long, tapering, gray-green leaves which grow in a spiny, overlapping cluster, producing a basin in which water and organic debris collects. In spring and early summer the flower stalks (bracts) appear. These bracts are a distinctive red, often tipped with yellow, and it is from these bracts that the small purple flowers develop.

Spanish Moss
Tillandsia usneoides

This graceful plant is commonly seen draped over the branches of live oak and cypress trees. It is not a moss but is instead a close relative of the cardinal air plant, despite its very different appearance. It is a rootless epiphyte, with long, thread-like stems, which frequently branch and intertwine. The leaves are very narrow, gray in color and are hairy to retain moisture. As with many bromeliads, the yellow-green flowers are small and inconspicuous, but are fragrant at night.



Northern Needleleaf
(Reflexed)
Tillandsia balbisiana

The stems and leaves on this plant are distinctive in that they recurve and gradually narrow to the tips. Although smaller than the cardinal air plant, this bromeliad has the same basin-like structure at its base to trap water and organic matter.



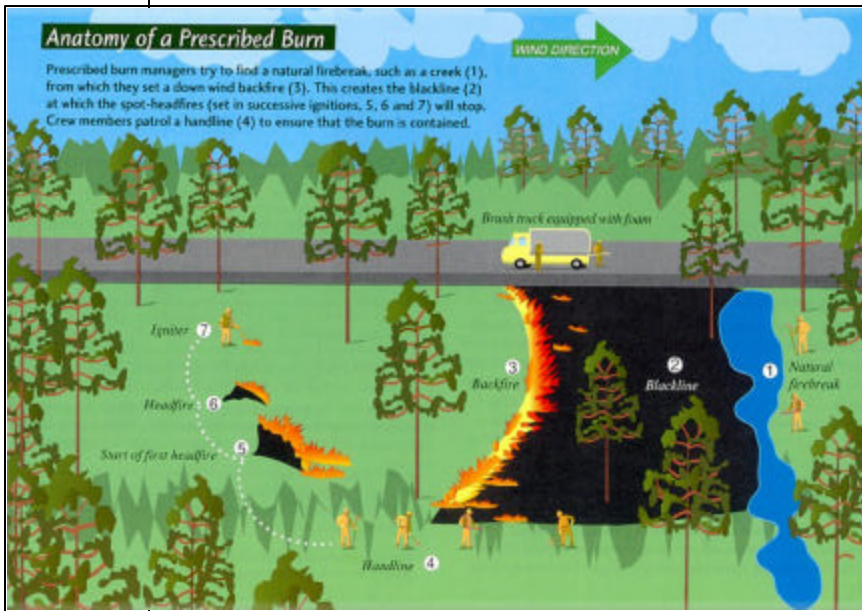
Southern Needleleaf
(Needle-leaved Wildpine)
Tillandsia setacea

The name of this bromeliad accurately describes the narrow needle-like leaves that grow from many small tufts at its base. This air plant has become more numerous in the cypress swamp over the past ten years.



Loxahatchee NWR Fire Program Update

By Christopher Robinson - Forestry Technician



Prescribed fire can be defined as the “controlled application of fire to a defined area under a specific set of conditions to achieve management goals”. Fire has been used on the refuge as a tool to improve or manipulate wildlife habitat and to remove unwanted vegetation and open up areas for viewing and to increase foraging habitat for a vast array of wildlife. Last years’ C-8 prescribed fire is an excellent example. The rank cattail was sprayed with herbicide followed several months later by a prescribed fire to clear the dead cattail. Results on the eastern half of C-8 were particularly impressive, and the impoundment took on a whole new look with up to 20 snail kites observed using the cypress in the northeastern corner as a nightly roost.

Historically in the Everglades, fire has played an important role in the ecosystem and its ability to support life. However, since man set foot in the Everglades the role of fire has diminished because of rapid urban development, drainage and manipulation of water levels, and through the introduction of invasive exotic plants such as melaleuca and Old World climbing fern. Some of the benefits of using prescribed fire include: improving or maintaining habitat for wildlife, stimulating the growth of nutritious wildlife forage, creating scenic vistas, reduction of dangerous fuel loads, reducing

invasion by hardwood and shrub species, restoring and maintaining fire-dependent communities, and cycling nutrients back into the system. Today the role of fire on the A . R . M . Loxahatchee N.W.R. is to provide as much of the same benefits that fire did historically. This can be accomplished through the use of “prescribed fire”.

Fire can also be used to restore native Everglades habitats and to control invasive plant seedlings and reduce dead exotic plant biomass. This will be a joint effort between the fire and exotics programs. Improper use of prescribed fire, or an uncontrolled wildfire could and probably would accelerate the spread and establishment of Old World climbing fern (*Lygodium*) and melaleuca within the marsh interior. Most invasive pest plants can survive fire and the stress only seems to trigger additional release of seeds and/or spores. Since most of the native vegetation is removed in the fire, the site created provides the perfect location for the germination of seeds and spores and the establishment of invasive species. The rapid growth of invasive exotic plants permits them to quickly outpace the growth of native species and allows them to outcompete natives for sites and sunlight. Areas must first be treated with herbicides before any application of fire occurs. Prescribed fire may then be used as a tool to control young seedlings while permitting native vegetation to regenerate. Proper and selective use of prescribed fire can also be used to restore sawgrass communities, which are being invaded by brush species such a wax myrtle and buttonbush as the result of drainage and changes in hydrology. Many shrub species are susceptible to fire while sawgrass is a fire-adapted species and flourishes if burned at regular intervals.



did historically. This can be accomplished through the use of “prescribed fire”.

In 2003, the Refuge hopes to conduct their first interior burn in coordination with exotic plant control activities. We currently have four interior prescribed burns totaling 6,921 acres and two proposed burns within Compartment C totaling 24 acres. These burns will likely take place from June through August of this year. The

(Continued from Page 1...)

fire treatment for Compartment C will reduce noxious vegetation to improve public viewing and to enhance wildlife habitat. The main management objectives of the interior burns will be to reduce hazardous fuel loading, maintain northern Everglades habitat, reduce invasive exotic plant biomass, control invasive exotic seedlings, and enhance habitat for endangered species such as the snail kite and the wood stork along with other various migratory birds and wildlife.

Refuge Hours & Fees

The refuge is open to the public from sunrise to sunset daily. Exact times are posted at each entrance and change with the hours of daylight. Currently the refuge opens at 6:00AM and closes at dusk. Exact hours are posted on our web site.

Winter hours for the Visitor Center are Monday through Friday 9am to 4pm and Saturday and Sunday from 9:00AM to 4:30PM.

A fee of \$5.00 is charged to **private** vehicles entering the refuge. When the fee booth is unmanned, visitors are subject to the honor system and should pay at the fee shelter next to the fee booth.

Meet the Staff

Project Leader.... Mark Musaus

Deputy Project Leader.... Rolf Olson

Refuge Operation Specialist.... Mindy Gautreaux

Administration.... Kim Arserio, Jean Ryan

Everglades Program Team.... Nick Aumen, Matt

Harwell, Leslie MacGregor, Paul McCormick,

Apriel Thompson, Michael Waldon

USFWS Ecological Services.... Cindy Brashear,

Stefani Melvin

Law Enforcement.... William Calvert, Shawn

Cottingham, Jared Klein

Wildlife and Habitat Management.... William

Adler, Bruce Arrington, Laura Brandt, Camille

Darby, Don Filipiak, Chris Robinson, Allison

Snow (USGS), William Thomas, Jr.

Maintenance Operations.... Manuel Garcia, Jerry

Grist, Allan Hansen, Steve Matzkow

Environment Education & Interpretation....

Susan Ahlfeld, Lois Chapman, Serena Rinker

Fee Staff.... Keith Boliek, Marie Pohl

If you are visiting, or if it is your own back yard, we want you to come to the refuge to help celebrate. There are several opportunities. As part of our Calendar of Events activities, we are hosting a Centennial series. We have asked other refuges in Florida and Georgia to send staff and give a program on their respective refuge. So far there have been presentations on Merritt Island, J.N. Ding Darling and Florida Panther refuges. More are planned in January and February so come on out to learn about the history, management and visitor opportunities at refuges just a few hours away.

In February we will host our fourth annual Everglades Day Festival. This year's theme is history with a special focus on the history of the Everglades as well as the National Wildlife Refuge System. We plan some great programs geared for the layman and families. There will be speakers, presentations, children's activities, all kinds of booths set up by other refuges as well as local conservation organizations.... and birthday cake!

On March 14, 2003 there will be a parade and celebration in Sebastian, Florida (just up the road) at Pelican Island. President Bush has been invited to dedicate a fantastic boardwalk that has been built that looks out on to the island. As you walk up the boardwalk there is a board with the name of every national wildlife refuge in the system, placed in chronological order from the newest back to Pelican Island. Take a ride and visit to find the board with the Arthur R. Marshall Loxahatchee refuge name on it and the date established.

***We're gonna have a good time tonight
(Ce-le-bra-tion)***

Let's celebrate, it's all right

***We're gonna have a good time tonight
(Ce-le-bra-tion)***

Let's celebrate, it's all right

We hope you will visit the refuge during the next few months to help us celebrate. Experience the wetlands and cypress forest that comprise the northern end of the unique Everglades system and see the wildlife that depend on those habitats. Come on out and learn the great efforts done for wildlife conservation over the last 100 years and help us work towards even greater achievements during the next century.

2002/2003 Winter Events Schedule

Wednesday, January 1

HAPPY NEW YEAR

The Visitor Center and trails will be open.

20th ANNUAL PHOTO CONTEST

Entries can be mailed or delivered in person to the refuge Visitor Center between January 1-20, 2003.

Information, contest rules, and entry forms will be available in the Visitor Center.

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Friday, January 3

CENTENNIAL REFUGE SERIES

1:00PM Visitor Center

National Key Deer Refuge is highlighted in this special series celebrating the refuge system's 100th birthday. Get a taste of the Keys and learn about our Florida refuge neighbor.

Saturday, January 4

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

POLE CANOEING THE EVERGLADES

1:00PM Meet at Visitor Center

Steve Bass demonstrates the traditional stand-up method of travel through the Everglades practiced by Native Americans.

Please note those programs requiring reservations. For reservations and information, call (561) 734-8303.

Sunday, January 5

SWAMP STROLL

2:00PM Visitor Center

Enjoy the beauty of a cypress swamp from a half-mile long boardwalk trail. Learn about "swamp tea," floating plants, and thigmotropism as a naturalist reveals the swamp's secrets to visitors.

Wednesday, January 8

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

NIGHT PROWL

7:30 PM Visitor Center

Experience the refuge after dark. See the creatures that come out after the sun sets. **RESERVATIONS REQUIRED**

January 10 & 11, 2003

LOXAHATCHEE NATURAL HISTORY ASSOCIATION ART CONTEST & SHOW

Entries will be accepted from 12-4 PM on January 10, 2003 and from 9 AM-12 PM on January 11, 2003. Contest rules and entry forms will be available in the Visitor Center.

Saturday, January 11

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

CANOEING THE EVERGLADES

8:00AM Headquarters Boat Ramp

Take a journey through the Everglades with an interpreter on our canoe trail. Bring canoe, PFD, water, sun/rain protection, and insect repellent. Some canoeing experience is recommended.

RESERVATIONS REQUIRED

Sunday, January 12

ART CONTEST RECEPTION

1:00PM - 3:00PM Visitor Center

A public reception for artists displayed in this year's show will be held in the Visitor Center. Refreshments provided by the Loxahatchee Natural History Association.

SUNSET BIRDING

4:00PM Marsh Trail

Late-day sightings may include night herons and snail kites coming home to roost. Bring binocular, field guide, and insect repellent.

Wednesday, January 15

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Saturday, January 18

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

CENTENNIAL REFUGE SERIES

1:00PM Visitor Center

Okefenokee National Wildlife Refuge, in southern Georgia, is highlighted in this special series celebrating the refuge system's 100th birthday. Find out about this special place and the mysterious swamp from which it gets its name.

What three refuges are named for women? - Elizabeth A. Morton NWR (NY), Rachael Carson NWR (ME), and Julia Butler Hansen NWR (WA)

2002/2003 Winter Events Schedule

Sunday, January 19

SWAMP STROLL

2:00PM Visitor Center

Enjoy the beauty of a cypress swamp from a half-mile long boardwalk trail. Learn about "swamp tea," floating plants, and thigmotropism as a naturalist reveals the swamp's secrets to visitors.

Wednesday, January 22

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Friday, January 24

WILDLIFE AROUND US

1:30PM Visitor Center

Debbie Fritz-Quincy of the Hobe Sound Nature Center will give us a live look at some of Florida's native animals.

Saturday, January 25

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

CANOEING THE EVERGLADES

8:00AM Headquarters Boat Ramp

Take a journey through the Everglades with an interpreter on our canoe trail. Bring canoe, PFD, water, sun/rain protection, and insect repellent. Some canoeing experience is recommended. **RESERVATIONS REQUIRED**

CENTENNIAL REFUGE SERIES 1:00PM

Visitor Center

Chassahowitzka and Crystal River National Wildlife Refuge, in north central Florida, are highlighted in this special series celebrating the refuge system's 100th birthday. Learn about the endangered manatees and whooping cranes that these refuges protect.

Wednesday, January 29

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Friday, January 31

WILDLIFE INVADERS

2:00PM Visitor Center

What effect does exotic wildlife have on the refuge? Biologist Bill Thomas reveals the threat of exotic animals to the refuge and discusses what strategies will be used to manage them.

Saturday, February 1

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Sunday, February 2

SWAMP STROLL

2:00PM Visitor Center

Enjoy the beauty of a cypress swamp from a half-mile long boardwalk trail. Learn about "swamp tea," floating plants, and thigmotropism as a naturalist reveals the swamp's secrets to visitors.

SUNSET BIRDING

4:00PM Marsh Trail

Late-day sightings may include night herons and snail kites coming home to roost. Bring binocular, field guide, and insect repellent.

Wednesday, February 5

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

NIGHT PROWL

7:30 PM Visitor Center

Experience the refuge after dark. See the creatures that come out after the sun sets. **RESERVATIONS REQUIRED**

Saturday, February 8

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

EVERGLADES DAY

8:00AM - 4:00PM

The day's events include birding, family walks, hands-on activities, music, food, children's activities, exhibits, and live programs. Contact the Visitor Center for more information.

Wednesday, February 12

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Saturday, February 15

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Please note those programs requiring reservations. For reservations and information, call (561) 734-8303.

2002/2003 Winter Events Schedule

CENTENNIAL REFUGE

SERIES 1:00PM

Visitor Center

Crocodile Lake National Wildlife Refuge, in the Florida Keys, is highlighted in this special series celebrating the refuge system's 100th birthday. Meet Manager Steve Klett and learn about our Florida refuge neighbor.

Wednesday, February 19

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Thursday, February 20

RESEARCH - WHAT'S GOING ON?

2:30PM Visitor Center

Senior Refuge Biologist Dr. Laura Brandt discusses what research and monitoring is being conducted on the refuge, findings, and plans for future studies.

Saturday, February 22

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

CANOEING THE EVERGLADES

8:00AM Headquarters Boat Ramp

Take a journey through the Everglades with an interpreter on our canoe trail. Bring canoe, PFD, water, sun/rain protection, and insect repellent. Some canoeing experience is recommended. **RESERVATIONS REQUIRED**

Sunday, February 23

SWAMP STROLL

2:00PM Visitor Center

Enjoy the beauty of a cypress swamp from a half-mile long boardwalk trail. Learn about "swamp tea," floating plants, and thigmotropism as a naturalist reveals the swamp's secrets to visitors.

Wednesday, February 26

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Friday, February 28

FLORIDA'S ALLIGATORS AND CROCODILES: MONSTER OR MYTH?

1:30PM Visitor Center

Hobe Sound Nature Center Naturalist Peter A. Quincy, will unlock the mysteries of these fascinating reptiles.

Saturday, March 1

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

CENTENNIAL REFUGE SERIES

1:30PM Visitor Center

Hobe Sound National Wildlife Refuge, our satellite and closest neighbor will be highlighted in this special series celebrating the refuge system's 100th birthday. Join Hobe Sounds manager, Margo Stahl, as she enchants us with the wonders of this coastal refuge.

Sunday, March 2

SUNSET BIRDING

4:00PM Marsh Trail

Late-day sightings may include night herons and snail kites coming home to roost. Bring binocular, field guide, and insect repellent.

Wednesday, March 5

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

NIGHT PROWL

7:30 PM Visitor Center

Experience the refuge after dark. See the creatures that come out after the sun sets. **RESERVATIONS REQUIRED**

Thursday, March 6

EXOTIC FISH OF SOUTH FLORIDA

1:30PM Visitor Center

Paul Shafland of the Florida Fish & Wildlife Conservation Commission Exotic Fish Lab, will give a fish-eye view of South Florida's non-native freshwater fish communities.

Saturday, March 8

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

CANOEING THE EVERGLADES

8:00AM Headquarters Boat Ramp

Take a journey through the Everglades with an interpreter on our canoe trail. Bring canoe, PFD, water, sun/rain protection, and insect repellent. Some canoeing experience is recommended. **RESERVATIONS REQUIRED**

Please note those programs requiring reservations. For reservations and information, call (561) 734-8303.

2002/2003 Winter Events Schedule

RAPTORS AND REPTILES

1:30PM Visitor Center
Busch Wildlife Sanctuary Director David Hitzig will introduce us to South Florida native reptiles and birds of prey.

Sunday, March 9

SWAMP STROLL

2:00PM Visitor Center
Enjoy the beauty of a cypress swamp from a half-mile long boardwalk trail. Learn about "swamp tea," floating plants, and thigmotrophism as a naturalist reveals the swamp's secrets to visitors.

Wednesday, March 12

EARLY BIRD SPECIAL

7:30AM Marsh Trail
This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Saturday, March 15

EARLY BIRD SPECIAL

7:30AM Marsh Trail
This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

BUTTERFLIES & WILDFLOWERS

9:00AM Visitor Center
Join naturalist Hal Wiedemann for a slide show and walk to view some of the small wonders of the refuge.
RESERVATIONS REQUIRED

Sunday, March 16

PHOTOGRAPHY CONTEST RECEPTION

1-3:00PM Visitor Center
A public reception for the photographers displayed in this year's exhibit will be held in the Visitor Center. Refreshments provided by the Loxahatchee Natural History Association.

Wednesday, March 19

EARLY BIRD SPECIAL

7:30AM Marsh Trail
This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Thursday, March 20

SCAT IDENTIFICATION WORKSHOP

1:30PM Visitor Center
Join Interpretive Specialist Serena Rinker as she shows that you don't have to see an animal or its tracks to know that it has been there.

Friday, March 21

SOMETHING'S FISHY

2:00PM Visitor Center
Refuge Biologist Bill Thomas reels the line in on the life cycle of bass and how to catch them.

Saturday, March 22

EARLY BIRD SPECIAL

7:30AM Marsh Trail
This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

CANOEING THE EVERGLADES

8:00AM Headquarters Boat Ramp
Take a journey through the Everglades with an interpreter on our canoe trail. Bring canoe, PFD, water, sun/rain protection, and insect repellent. Some canoeing experience is recommended.
RESERVATIONS REQUIRED

INVASIVE PLANT CLINIC

1:00PM Visitor Center
Plant ecologist Chris Lockhart will talk about Palm Beach County's Invasive Pest Plant Ordinance, explain how it can help save our native wildlife, and show what native alternatives are available. A drawing for free plants will be held for participants.

Wednesday, March 26

EARLY BIRD SPECIAL

7:30AM Marsh Trail
This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Friday, March 28

ASK THE MANAGER

2:00PM Visitor Center
Meet Refuge Manager Mark Musaus as he gives a brief "State of the Refuge" address and opens the program to audience questions.

Saturday, March 29

EARLY BIRD SPECIAL

7:30AM Marsh Trail
This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

FLORIDA'S ANCIENT SEAS

2:00PM Visitor Center
Take a look at Florida 20 million years ago, three million years ago, and one hundred thousand years ago. Florida Atlantic University Geology Professor Dr. Edward Petuch will show us how Florida appeared in ancient times.

Sunday, March 30

SWAMP STROLL

2:00PM Visitor Center
Enjoy the beauty of a cypress swamp from a half-mile long boardwalk trail. Learn about "swamp tea," floating plants, and thigmotrophism as a naturalist reveals the swamp's secrets to visitors.

Wednesday, April 2

EARLY BIRD SPECIAL

7:30AM Marsh Trail
This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Please note those programs requiring reservations. For reservations and information, call (561) 734-8303.

2002/2003 Winter Events Schedule

Saturday, April 5

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

CANOEING THE EVERGLADES

8:00AM Headquarters Boat Ramp

Take a journey through the Everglades with an interpreter on our canoe trail. Bring canoe, PFD, water, sun/rain protection, and insect repellent. Some canoeing experience is recommended.

RESERVATIONS REQUIRED

THE GOOD, THE BAD, & THE UGLY

1:30PM Visitor Center

Learn which trees and shrubs are harmful to Florida's natural resources and which plants make attractive, habitat-friendly replacements. Environmental Scientist Mike Bodle of the South Florida Water Management District identifies the "good" and the "bad" and how we can make positive changes for our environment.

Sunday, April 6

SUNSET BIRDING

5:30PM Marsh Trail

Late-day sightings may include night herons and snail kites coming home to roost. Bring binocular, field guide, and insect repellent.

Wednesday, April 9

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Please note those programs requiring reservations. For reservations and information, call (561) 734-8303.

NIGHT PROWL

7:30 PM Visitor Center

Experience the refuge after dark. See the creatures that come out after the sun sets. **RESERVATIONS REQUIRED**

Friday, April 11

STRAZZULLA MARSH

1:30PM Visitor Center

Refuge Biologist Bruce Arrington offers a rare look into a wonderful marsh land adjacent to the refuge. Discover what makes it special, who lives there and its water quality, and find out the latest news of who owns it.

Saturday, April 12

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Sunday, April 13

SWAMP STROLL

2:00PM Visitor Center

Enjoy the beauty of a cypress swamp from a half-mile long boardwalk trail. Learn about "swamp tea," floating plants, and thigmotrophism as a naturalist reveals the swamp's secrets to visitors.

Wednesday, April 16

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Saturday, April 19

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

CANOEING THE EVERGLADES

8:00AM Headquarters Boat Ramp

Take a journey through the Everglades with an interpreter on our canoe trail. Bring canoe, PFD, water, sun/rain protection, and insect repellent. Some canoeing experience is recommended.

RESERVATIONS REQUIRED

BUTTERFLIES & WILDFLOWERS

9:00AM Visitor Center

Join naturalist Hal Wiedemann for a slide show and walk to view some of the small wonders of the refuge.

RESERVATIONS REQUIRED

Wednesday, April 23

EARLY BIRD SPECIAL

7:30AM Marsh Trail

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Saturday, April 26

EARLY BIRD SPECIAL

This one-mile walk is for the birds and the early risers. Bring binocular, field guide, and insect repellent.

Sunday, April 27

SWAMP STROLL

2:00PM Visitor Center

Enjoy the beauty of a cypress swamp from a half-mile long boardwalk trail. Learn about "swamp tea," floating plants, and thigmotrophism as a naturalist reveals the swamp's secrets to visitors.

The smallest refuge is .60 acre Mille Lacs NWR (Minnesota); the largest is Arctic NWR (Alaska) at 19.2 million acres.

Replicating the Everglades Landscape - The LILA Project

Provided by the South Florida Water Management District

Background

Everglades restoration is an enormous effort now moving forward through many projects incorporated under the Comprehensive Everglades Restoration Plan (CERP). The framework of restoration is built on the assessment and interpretation of performance measures as individual project components unfold.

The Loxahatchee Impoundment Landscape Assessment (LILA) project is now underway in the Arthur R. Marshall Loxahatchee National Wildlife Refuge and will assist in developing performance measures for the restoration effort. The project will divide two existing 34-acre impoundments into four 17-acre impoundments with a re-circulating water system that provides tight control over water levels. Each impoundment will be constructed to physically mimic the Everglades landscape, and water depths and flows will be manipulated to induce related responses by wildlife, tree island, and ridge and slough communities. Scientists and engineers will use the project to test restoration plans on a small scale before applying them to the large-scale Everglades ecosystem.

Project Design and Operation

These smaller pond areas, called “macrocosms,” will each receive the same hydrologic treatment; that is, flow rate, water depths, etc. In each macrocosm, a shallow and a deep slough will be sculpted from the existing marsh surface. Ridges will separate sloughs. Specific design and operation conditions will provide data for collective assessment of controlled and replicated conditions of the historic Everglades. Design elements include:

- ♦ Constrictions to produce areas of higher flow velocities.
- ♦ Shallow and deep holes to simulate alligator holes and provide deep-water refuges for fish.
- ♦ Tree islands in deep sloughs, one built from peat and the other built from peat that sits on a limestone rubble core.
- ♦ Controlled access of aquatic animals to the deep-water refuge.

To provide flowing water to the project, a re-circulating water system will be established using an electric pump, gravity flow, and gated structures. A second portable pump will be used as a backup and to pump water out during extreme high water events.

Restoration Assessment Studies

The complexities of Everglades Restoration make it essential that decisions are made according to sound science. The studies in LILA provide that science because they control for hydrology, allowing for precise measurement of the environmental response. Once the landscape features are constructed, researchers will manipulate water flow depths and flow rates to examine their effects upon wading birds, fish, soil, water quality and a wide variety of plants. The results of these studies will better define the hydrologic patterns that sustain a healthy Everglades, and they will guide the Comprehensive plan by ensuring that reliable science is maintaining a system-wide perspective throughout the restoration program.



Opportunities for Public Education

LILA provides an ideal opportunity for the public to learn about the Comprehensive Everglades Restoration Plan. While the Everglades restoration project will be long-term and take place largely out of the public's view, the LILA project will allow for public access where the process of restoration can be experienced first hand. Visitors will be able to see construction work that is restoring tree islands and ridge and slough habitats, increasing wildlife use, and demonstrating the integration of science into the restoration process.

An information Kiosk will provide visitors with information about the project, and opportunities will be available for guided tours around the impoundments. When LILA recovery is complete, the public can spend a morning watching a flock of wading birds feed in a restored slough habitat at the same time that scientists are collecting valuable information to support the Comprehensive Everglades Restoration Plan.

A dedication ceremony and a celebration of the partnership between the South Florida Water Management District and the Refuge will be held on the 4th Annual Everglades Day, February 8, 2003. For more information about the ceremony, call Serena Rinker, at 561-732-3684, extension 109.

Loxahatchee's Administrative Support Staff

By Mindy Gautreaux, Refuge Operations Specialist



From Left to Right: Kim Arserio, Mindy Gautreaux, Mark Musaus, Aprel Thompson, Jean Ryan

Mark Musaus, Project Leader

Mark has been the Project Leader, or Refuge Manager, of Loxahatchee since August 1998. He oversees and maintains Administrative, Biological, Maintenance, Public Use, and Law Enforcement Programs at both Loxahatchee and our satellite refuge, Hobe Sound NWR. Mark was recognized as the "Refuge Manager of the Year" in 2000 due to his successful relationships with refuge partners, and his leadership in transforming Loxahatchee into a "center of excellence." Mark has spent the last 28 years working for the U.S. Fish and Wildlife Service on many other refuges in the Southeast Region such as Savannah Coastal Refuges in Savannah, Georgia, Choctaw NWR in southwest Alabama, J.N. Ding Darling NWR on Sanibel Island, Piedmont NWR in central Georgia, and Tennessee NWR in western Tennessee.

Mark was born in Caraca, Venezuela, and moved to the U.S. when he was five years old. He grew up in Park Ridge, New Jersey, and received his B.S. degree in Biology from Grove City College in Pennsylvania. Mark and his wife, Linda, have two daughters, Lauren and Meggan. He spends his time away from the refuge attending church and family activities, fishing, bicycling, canoeing, and enjoying music. Refuge staff are hopeful that Mark will remain at the refuge for many years to come, and if he doesn't, too bad... we won't let him leave anyway!

Rolf Olson, Deputy Project Leader

Welcome aboard! Rolf (pronounced "Golf" with an "R") became the new Deputy Project Leader on December 1, 2002. His responsibilities include supervising 30-38 employees (depending on the season) to ensure the day-to-day operations of the refuge run smoothly, working closely with the Administrative Officer on budgeting issues, and also serving as a refuge law enforcement officer in a collateral duty capacity. Rolf's 15 years of federal government service include 12 years with the U.S. Fish and Wildlife Service where he has worked in the Northeast Regional Office as a real-estate appraiser; at St. Marks NWR in Florida as a Forester; at Chassahowitzka NWR in Florida as a Refuge Operations Specialist; and at Carolina Sandhills NWR in South Carolina, as the Deputy Project Leader.

Rolf is from Windowrock, Arizona (northeast Arizona), and he received his formal training as a Forester at the North Arizona University. Rolf and his wife Pam have two daughters, Anita (nine), and Danielle (six months). We are excited to have Rolf on board with us and we hope you will join us in welcoming him to Loxahatchee!



Mindy Gautreaux, Refuge Operations Specialist

Mindy transferred to Loxahatchee from Chassahowitzka NWR in October 2001. She serves as the Deputy Project Leader's right hand support person, working behind the scenes to ensure day-to-day operations and projects are carried out. She is also the program lead for the refuge's Public Use Program, which is responsible for supporting Visitor Center, Volunteer Program, Environmental Education and Interpretive Programs, and a Fee Collection Program. Her other responsibilities include serving as the station Property Officer, station Safety Officer, and as a station Contracting Officer Representative. Mindy is also an Instructor for the Department of Interior's MOCC (Motorboat Operators Certification Course).

Mindy is from Baton Rouge, Louisiana, and she received her Wildlife Management degree from Louisiana State University. Mindy has worked for the U.S. Fish and Wildlife Service for five and a half years and at several refuges throughout the southeast region (Cameron Prairie NWR, in SW Louisiana, Okefenokee NWR in SE Georgia, and Chassahowitzka NWR in Crystal River, Florida). Mindy and her husband, Kevin, enjoy playing with their two Miniature Schnauzers, Zoe and Miko, in their free time.

Kim Arserio, Administrative Officer

Did you ever wonder how the refuge functions financially? How the lights stay on? How we purchase new equipment? Or, how the refuge carries out a million dollar exotics control contract? Well its all thanks to Kim, who manages our multi-million dollar budget, that includes over 30 cost structures! Besides overseeing the refuge budgets for both Loxahatchee and Hobe Sound, Kim serves as the Administrative Program leader, personnel specialist, uniform coordinator, and contracting officer. Kim's 19 years of government service (four with the U.S. Fish and Wildlife Service) have taken her all over the world, literally. She worked for the U.S. Army and DODDS in Germany, the U.S. Air Force in San Antonio, Texas, the U.S. Coast Guard and Veteran Affairs office in Miami, and the Veteran Affairs office in West Palm Beach, Florida. Lucky for us, Kim transferred to the refuge in October 1998 and she has been the glue that holds this place together since then!

Kim is from Cheyenne, Wyoming, where her family and two sisters reside. She and her husband, Bob, have four children and four grandchildren. In her spare time Kim enjoys spending time at the beach, horseback riding, watching sports, reading, studying history, traveling, and looking for frog collectibles to add to her collection.

Jean Ryan, Secretary

Jean has been the Secretary at Loxahatchee for two years now, and she has 31 total years of federal government service. Jean's primary responsibilities include time and attendance, personnel, and filing, but she has a broad spectrum of duties necessary to keep the office going. She also makes travel arrangements and completes travel vouchers for staff, works with office volunteers, answers visitor inquiries and provides refuge information, supports the fee program by occasionally selling refuge passes, assists the Administrative Officer, sorts mail, clips

newspaper articles, maintains office equipment, orders office supplies, coordinates special events, dispatches for the refuge, and even occasionally assists biologist with alligator surveys. Jean is also trained as a fire dispatcher where she received actual experience on a fire out west just this past summer.

Jean has been married to her husband, Chuck, for 30 years. She is from Tonawanda, New York (close to Buffalo), but she has lived in Florida for the past 25 years. Jean spends her free time visiting local relatives, playing golf and tennis, working out at the gym, traveling, and doing arts and crafts. Jean believes that "working for the U.S. Fish and Wildlife Service is the best!" She loves working here because after all, where else can you work with such great people, do alligator surveys, ride in airboats, and have opportunities to see other refuges?

Aprel Thompson, Secretary (EPT)

Aprel serves as the Secretary to the six-person Everglades Program Team (EPT), while also supporting the entire refuge, as her duties are split between EPT and Loxahatchee. Aprel has approximately 12 years of government service, and she has been at Loxahatchee since May 2001. When not supporting the EPT office, Aprel provides backup support to the Administrative Officer assisting with personnel, travel, budget, time and attendance, and filing. She also works with office volunteers, answers visitor inquiries and provides refuge information, supports the fee program by occasionally selling refuge passes, orders office supplies, dispatches for the refuge, and even occasionally assists biologist with alligator surveys.

Aprel is originally from Fairfax County, Virginia. Prior to working at the refuge, Aprel worked for The Department of Justice's U.S. Attorney's Office and Office of Independent Council, and the U.S. Army Corps of Engineers. In her free time she enjoys scrapbooking, going to the gym, selling nutritional products, and making sure her golden retriever, Maggie, stays out of trouble!

In 1935, Red Rock Lakes NWR (Montana) was created to save the last 73 endangered trumpeter swans known in the wild. Today, 14,000 of these majestic birds are found in Alaska, Montana, and the upper Midwest.

The Evil Weevil

By Susan Ahlfeld

Why are all the bromeliads dying? What is killing them? How do we keep the bromeliads from dying?

These are just a few of the questions that have been circulating around the A.R.M Loxahatchee National Wildlife Refuge and throughout southern Florida in recent months.



The bromeliads are dying because of the Mexican bromeliad weevil (*Metamasius callizona*), an exotic and invasive insect dubbed the “evil weevil”, destroying populations of 5 of the native bromeliad species in Florida. The weevil entered Florida in a shipment of bromeliads from Mexico, and by the time it was discovered in a nursery in 1989, it had become established in Broward County. Now it is found in 16 counties in south Florida and is fast approaching the state’s most rare and endangered bromeliad populations in the Everglades area.



The two bromeliads on the refuge that are impacted by the “evil weevil” are the Giant Airplant (*Tillandsia utriculata*) and the Cardinal Airplant (*T. fasciculata*). Both have been recently listed as endangered as a direct result of the weevil’s destruction. The weevil kills the plants

through the tunneling action of its immature stage (larvae), which may eat out the entire base, causing the plant to fall from the tree that supports it. By attacking the large breeding individuals, the weevil can quickly wipe out the entire population. Bromeliads play crucial roles in the environment and contribute to the natural beauty of what visitors are seeking when visiting A.R.M. Loxahatchee National Wildlife Refuge.

The Save Florida’s Native Bromeliads project is an attempt by the Florida Council of Bromeliad Societies, the University of Florida, and the Florida Department of Agriculture and Consumer Services (Division of Plant Industry) to manage the weevil and conserve the bromeliad species at risk before the weevil is able to completely destroy them. In the project there are 3 components: classical biological control of the weevil, collection of seeds of bromeliad species at risk, and educational outreach by providing educational materials and programs.



If the project is successful, it will result in an immediate reduction of the damage being done by the weevil and the long-term protection of these beautiful native plants.

You can find more information about Florida’s bromeliads and the “evil weevil” on the internet at <http://savebromeliads.ifas.ufl.edu/>.

Twenty-one refuges are designated as Class 1 Areas under the Clean Air Act, meaning they receive highest levels of protection. Can you name one? Two answers: OkefenokeeNWR (GA) and Cape Romain (SC).

Gator Bert's Kids Corner - Wildlife Bingo

By Chrissanna (gator) Srdoch - University of Florida

While you're walking through the winter wonderland at Loxahatchee... Try playing a game of wildlife bingo! All you have to do is look for these "snow birds" or year round birds on or near the refuge!! See if you can get 5 in a row to make a bingo!!

Great Blue Heron	Bald Eagle	Purple Gallinule	Ruby-Throated Hummingbird	Snail Kite
Mockingbird	American Coot	Cardinal	Mourning Dove	Boat-Tailed Grackle
Owl	Hawk	Free Space	Anhinga	Snowy Egret
Great Egret	Blue Jay	Little Blue Heron	Vulture	Woodpecker
Glossy Ibis	Red-Winged Blackbird	Killdeer	Blue-Gray Gnatcatcher	Cattle Egret

As you're looking for the birds, keep these cool facts in mind!!!!

The **Great Blue Heron** can be as large as 4 feet tall. **Great Egrets** are white and have black feet and yellow bills while **Snowy Egrets** have black bills and yellow feet. **Cattle Egrets** are also white. They are smaller and have a yellow bill with coral colored legs. **Glossy Ibises** are a glossy purplish chestnut color and like to wade in marshes.

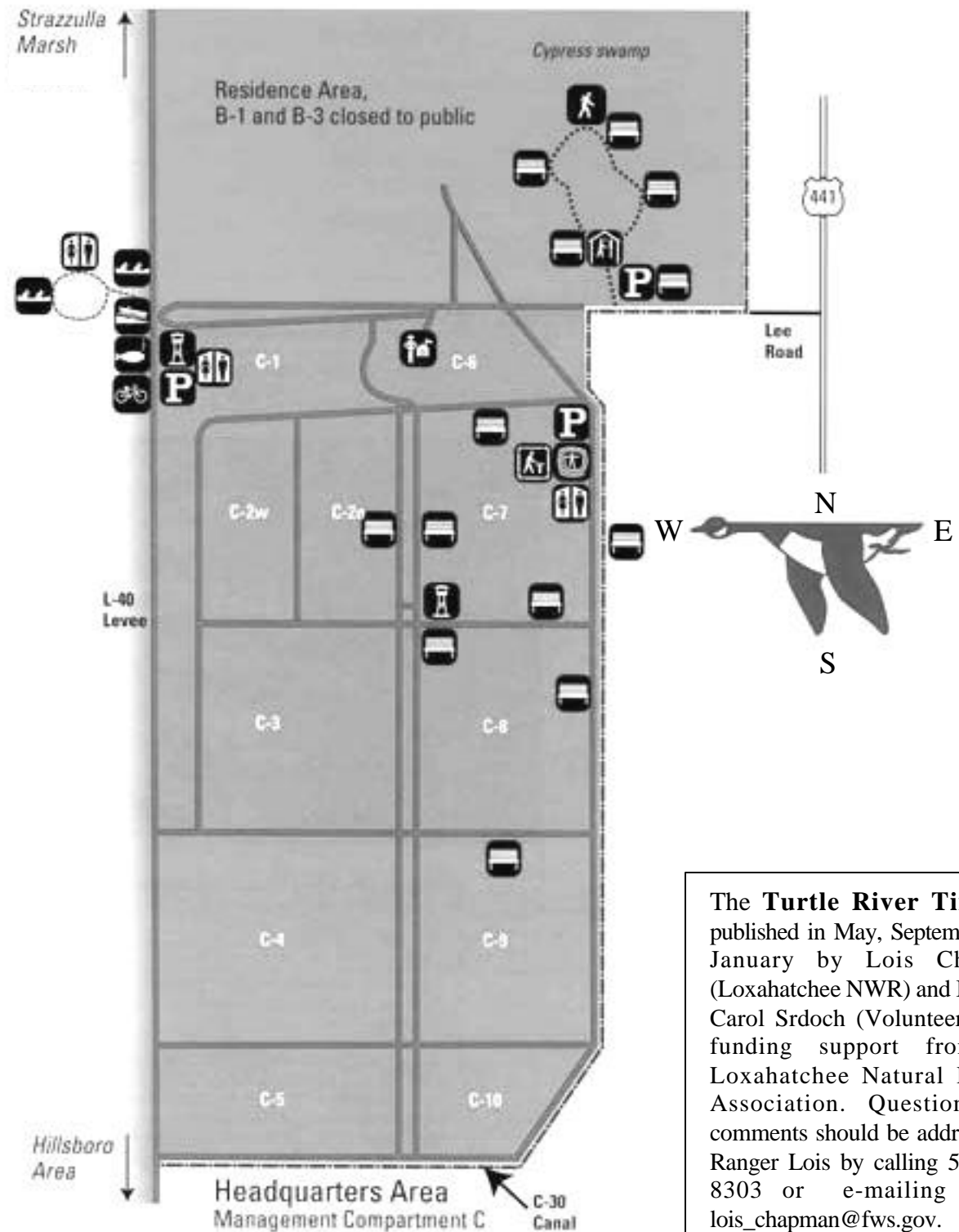
Purple Gallinules are a darkish purple with a blue shield looking thing across their face and red on their beak. The **American Coot** appears more duck-like than the Purple Gallinule. Additionally, coots have white bills. Many people mistake the **Anhinga** for a hawk. When people hear the **Killdeer**, they often describe the sounds as sounding like kill-deeah.

The **Bald Eagle** is the national bird of the USA. It has a white tail and a white head. **Vultures** like to soar way high up in the sky in big circles. Sometimes it looks like their wings are in a V shape. **Hawks** are birds of prey. They have a strong claws and a sharp hooked beak. **Snail Kites** eat apple snails. They're pretty rare, so you'll have to look really hard and be pretty luck to get bingo with this bird. **Owls** are nocturnal birds and can barely be heard when they are flying.

The **Red-Winged Blackbird** has red and yellow parts of their wings. This makes it easier to identify them. The **Ruby-Throated hummingbird** lives all over the east coast. Only the male hummingbird has the ruby red throat. **Boat-Tailed Grackles** are black and irridsecent. They have a large wedge shaped tail. There are many types of **Woodpeckers**. A good way to find them is to listen for them tapping the trees.

The **Blue-Gray Gnatcatcher** is really little and looks a little like a tiny mockingbird. **Mockingbirds** are notorious for imitating other birds, if you hear a bunch of different songs coming from the same bird, it might be a mockingbird. **Cardinals** have strong red beaks and often their song consists of the syllable cheer. The **Blue Jays** tend to be noisy and use the syllable jay often. **Mourning Doves** are relatively common and use the syllable coo cooh.

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
A.R.M. Loxahatchee National Wildlife Refuge
10216 Lee Rd.
Boynton Beach, FL 33437-4796



The **Turtle River Times** Is published in May, September, and January by Lois Chapman (Loxahatchee NWR) and Bob and Carol Srdoch (Volunteers) with funding support from the Loxahatchee Natural History Association. Questions and comments should be addressed to Ranger Lois by calling 561-734-8303 or e-mailing her at lois_chapman@fws.gov.